

cross-shaped *Pugionium coruatum*, originally described by Gmelin in the last century, but quite unknown to modern botanists."

From Ding-hu, where much trouble was experienced from the Chinese officials, the party proceeded into Ala-shan—"a wild and barren desert, inhabited by Olib Mongols, which forms the southern part of the high plateau of the Gobi." Here, at Din-yuang-ing, a hospitable reception was met with from the ruling Prince, a tributary of the Chinese Empire. After a fortnight's stay in the Ala-shan mountains, and exploration of their fauna and flora, it was decided to return to Peking in order to obtain fresh supplies of money and necessaries for a new journey.

In his second volume Colonel Prejevalsky gives us an account of his second expedition from Peking, in 1872. On this occasion he left Kalgan on March 17th, and returned by the same route to Alashan, where the prince of Alashan and his sons received him with open arms, and were in fact very unwilling to let him go again. After some delay, however, he succeeded in being allowed to join a caravan of Tangutans and Mongols returning from Peking to the temple of Chobsen, situated in the province of Kan-su, only five days' journey from Lake Koko-nor, and arrived there early in July. After spending several months in making zoological and botanical observations in the hitherto unexplored mountains of Kan-su, another start was made, and the much-desired lake reached on the 25th of October. "The dream of my life," says our author, "was thus accomplished, and the object of the expedition gained."

We need not follow our adventurous traveller in his further wanderings. Suffice to say that in a winter journey from Koko-nor he finally penetrated to the banks of the Upper Yang-tse-kiang, only about 27 days' journey (or 500 miles) from Lhasa, where want of funds was the sole obstacle that stopped his further progress. But we strongly recommend every naturalist to read Colonel Prejevalsky's narrative for himself; for a more interesting journal has never come under our perusal. Zoological, botanical, and ethnological notes respecting these unknown regions are interspersed throughout the volumes, and render them especially attractive to those engaged in the study of these sciences.

Colonel Prejevalsky's third volume, which in the original Russian gives a complete account of his biological discoveries, does not form a part of the present edition. But we believe this also is being translated by a person fully competent to the task, and will shortly be given to the English public in another form. P. L. S.

The School Manual of Geology. By the late J. B. JUKES, F.R.S. &c. Third Edition, revised and enlarged, by A. J. JUKES-BROWNE, F.G.S. &c. Small 8vo, with numerous illustrations. A. & C. Black: Edinburgh, 1876.

This is one of the best of the smaller geological manuals; and the editor keeps it up to the level of advancing knowledge, as far as an elementary work of this kind requires. Natural operations now

affecting the earth's surface, and their results,—the rocks and strata formerly produced and subsequently altered, or worn away and re-produced, by similar agencies,—the meaning of fossils,—the successive groups of strata, or “formations,” and their chief characters,—and, altogether, the history of the earth, deduced from the facts observable in it, as interpreted by the processes now in operation—these are the divisions of the subject-matter of this well written and conscientiously edited little book. Some of the latest information bearing on minerals, lithology, the Cambrian and Cretaceous systems, and the Glacial period have been concisely and carefully incorporated in this edition.

MISCELLANEOUS.

Anatomical and Morphological Researches on the Nervous System of Hymenopterous Insects. By M. ED. BRANDT.

THE nervous system of the adult Hymenopterous insects is little known, still less that of their larvæ. There does not exist any investigation of the metamorphoses which the ganglionic chain undergoes in the passage from the larval state to that of the adult insect.

The nervous system of only eight species of Hymenoptera is known; these are *Bombus muscorum*, *Apis mellifica*, *Vespa crabro*, *Scolia hortorum*, *Formica ligniperda*, *Ichneumon atropos*, *Athalia centifolia*, and *Sirex gigas*.

Comparative and morphological researches are wanting. I have undertaken with this view a study of the nervous system of the Hymenoptera, by dissecting a number of species of the same group. I have thus determined the morphological character of the nervous system of each family. Having terminated my researches on the Hymenoptera, I have the honour of submitting to the Academy their principal results.

I have studied the nervous system of the adults in seventy-eight species belonging to all the families of Hymenoptera and to most of the genera, that of the larvæ in twenty-two species, and the metamorphoses of the chain of ganglia in fifteen species.

I. *The Nervous System of the Adult Hymenoptera.*—There are two cephalic ganglia (a supracæsophageal and a subcæsophageal ganglion), two or three thoracic and from three to seven abdominal ganglia. The Apides and the Wasps (*Vespa*, *Odynerus*, *Eumenes*), as well as the Crabrones (*Ectenius* and *Thyreopus*) and *Chrysis* have two thoracic ganglia, while *Cerceris*, *Ammophila*, *Pompilus*, *Formica*, *Mutilla*, *Myrmosa*, the Entomospeces and the Phytospeces (*Cimbex*, *Tenthredo*, *Sirex*) have three thoracic ganglia. In the Hymenopterous insects with two thoracic ganglia the second always presents, in its middle, a more or less distinct emargination, an indication of the fusion of two ganglia. Sometimes the indentation is very marked and the ganglion becomes double (*Odynerus*).